PENERAPAN ALGORITMA K-MEANS BERDASARKAN COSINE SIMILARITY UNTUK PENGENALAN KAYU KELAPA

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ABSTRAK

Proses pemilihan kualitas kayu kelapa (Cocos nucifera L.) umumnya dilakukan oleh seorang grader terlatih dengan cara melihat secara langsung tanpa bantuan apapun. Masyarakat bergantung kepada grader tersebut dalam pemilihan kualitas kayu kelapa.Untuk menghilangkan ketergantungan masyarakat, penelitian ini bertujuan untuk menerapkan algoritma K-Means berdasarkan Cosine Similarity untuk pengenalan kayu kelapa secara otomatis. Proses pengenalan kayu kelapa sebelumnya diperlukan metode ekstraksi fitur tekstur berbasis histogram sebagai penentu karakteristik citra kayu kelapa. Hasil ekstraksi fitur tekstur dikelompokkan menggunakan metode K-Means Clustering dengan jarak Cosine Similarity. Berdasarkan hasil pengujian dari 170 data citra kayu kelapa, aplikasi pengenalan kayu kelapa menghasilkan akurasi sebesar 60.3%.

Kata Kunci : Computer Vision, Kayu Kelapa, K-Means Clustering, Cosine Similarity, Statistical Histogram

APPLICATION OF K-MEANS ALGORITHM BASED ON COSINE SIMILARITY FOR COCONUT WOOD RECOGNITION

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ABSTRACT

The process of selecting the quality of coconut wood is generally performed by a trained grader by looking coconut wood directly manually. People are highly dependent on the trained grader. To eliminate this dependence, this research aims to implement the K-Means algorithm based on Cosine Similarity for coconut wood recognition automatically. The first process required the extraction of texture features method based on histogram as a determinant characteristic image of coconut wood. The extraction of texture features is classified using K-Means Clustering with Cosine Similarity. Based on the test results of 170 image data coconut wood, the application of coconut wood recognition produces an accuracy of 60.3%.

Keyword : Computer Vision, Coconut Wood, K-Means Clustering, Cosine Similarity, Statistical Histogram